

Rheumatoid arthritis complications

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Rheumatoid arthritis (RA) is a chronic systemic inflammatory disease that is associated with an increased risk of cardio and [cerebrovascular](#) pathology.

The process involves an inflammatory response of the capsule around the joints (synovium) secondary to swelling (turgescence) of synovial cells, excess synovial fluid, and the development of fibrous tissue (pannus) in the synovium. It also affects the underlying bone (focal erosions) and cartilage (thinning and destruction). RA can also produce diffuse inflammation in the lungs, the membrane around the heart, the membranes of the lung (pleura), and whites of the eye, and also nodular lesions, most common in subcutaneous tissue. It is a clinical diagnosis made primarily on the basis of symptoms and physical examination. X-rays, laboratory testing, and synovial fluid analysis might help support a diagnosis or exclude other diseases with similar symptoms.

Cervical spine involvement

Common involvement

1. upper cervical spine: involved in 44–88% of RA cases ¹⁾ : a) anterior [atlanto-axial subluxation](#): the most common manifestation of RA in the cervical spine, found in up to 25% of patients with RA.

b) [basilar impression](#) (BI): upward translocation of the odontoid process, found in $\approx$ 8% of patients with RA

c) pannus of granulation tissue: forms around the odontoid

2. subaxial C-spine (i.e. below C2) subluxation

Less common involvement of the cervical spine in RA

1. posterior subluxation of the atlantoaxial joint: must have either associated fracture of or near total arthritic erosion of odontoid

2. vertebral artery insufficiency secondary to changes at the cranio-cervical junction ²⁾.

Attachement points of the [transverse ligament](#) may be weakend.

A subset of RA patients developed positional [Vertebral Artery](#) (VA) occlusion associated with cervical spine involvement ³⁾.

Subaxial subluxation in rheumatoid arthritis

The direct effects of RA on the subaxial spine involves the facet joints posteriorly. Degenerative disc disease, which is generally a late manifestation in RA, is not the result of synovitis ⁴⁾. Involvement is most common at C2-3 and C3-4.

¹⁾

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²⁾

Rana NA, Hancock DO, Taylor AR. Atlanto-Axial Sub- luxation in Rheumatoid Arthritis. J Bone Joint Surg. 1973; 55B:458-470

³⁾

Tateishi Y, Tagami A, Baba H, Osaki M, Kawakami A, Akira T. Duplex Ultrasonography-Detected Positional Vertebral Artery Occlusion in Upper Cervical Rheumatoid Arthritis. Spine (Phila Pa 1976). 2016 Jan;41(1):26-31. doi: 10.1097/BRS.0000000000001136. PubMed PMID: 26583470.

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